

Abstract

INCREASING THE SNR OF SUCCESSIVE APPROXIMATION TYPE ADCS WITHOUT COMPROMISING THROUGHPUT PERFORMANCE SUBSTANTIALY

5 When converting an analog signal to N-bit digital codes, high SNR (signal to noise
ratio) by generating multiple N-bit codes from the same analog sample and averaging the N-
bit codes. However, the entire N-bit code is determined only a single time, and only P-bit (P
less than N) codes are generated. The P-bit codes may be averaged, and the N-bit code is
corrected based on the average value to generate an accurate N-bit digital code. As P can be
10 much less than N, the correction can be implemented in a few iterations, thereby enabling the
ADCs to be implemented with a high throughput performance. Due to the correction, a high
SNR may be attained as well.